

- H04L 12/58 · · Message switching systems (permutation- code selecting H04Q 3/02) [5,6]
- H04L 12/60 · · · Manual relay systems, e.g. push-button switching [5,6]
- H04L 12/62 · · · · with perforated tape storage [5,6]
- H04L 12/64 · Hybrid switching systems [5,6]
- H04L 12/66 · Arrangements for connecting between networks having differing types of switching systems, e.g. gateways [5,6]
- H04L 7/00 Arrangements for synchronising receiver with transmitter**
- H04L 7/02 · Speed or phase control by the received code signals, the signals containing no special synchronisation information
- H04L 7/027 · · extracting the synchronising or clock signal from the received signal spectrum, e.g. by using a resonant or bandpass circuit [5]
- H04L 7/033 · · using the transitions of the received signal to control the phase of the synchronising-signal- generating means, e.g. using a phase-locked loop [5]
- H04L 7/04 · Speed or phase control by synchronisation signals
- H04L 7/06 · · the synchronisation signals differing from the information signals in amplitude, polarity, or frequency
- H04L 7/08 · · the synchronisation signals recurring cyclically
- H04L 7/10 · · Arrangements for initial synchronisation

## Note(s)

This subclass covers:

- automatic control circuits for generators of electronic oscillations or pulses; [3]
- starting, synchronisation, or stabilisation circuits for generators where the type of generator is irrelevant or unspecified. [3]

This subclass does not cover stabilisation or starting circuits specially adapted to only one specific type of generator, which are covered by subclasses H03B, H03K. [3]

In this subclass, the following expression is used with the meaning indicated:

- "automatic control" covers only closed loop systems. [3]

H03L 7/00	<b>Automatic control of frequency or phase; Synchronisation (tuning of resonant circuits in general H03J; synchronising in digital communication systems, <u>see</u> the relevant groups in class H04) [3]</b>
H03L 7/02	· using a frequency discriminator comprising a passive frequency-determining element [3]
H03L 7/04	· · wherein the frequency-determining element comprises distributed inductance and capacitance [3]
H03L 7/06	· using a reference signal applied to a frequency- or phase-locked loop [3]
H03L 7/07	· · using several loops, e.g. for redundant clock signal generation (for indirect frequency synthesis H03L 7/22) [5]
H03L 7/08	· · Details of the phase-locked loop [3]
H03L 7/081	· · · provided with an additional controlled phase shifter [5]
H03L 7/083	· · · the reference signal being additionally directly applied to the generator (direct frequency synchronisation without loop H03L 7/24) [5]
H03L 7/085	· · · concerning mainly the frequency- or phase-detection arrangement including the filtering or amplification of its output signal (H03L 7/10 takes precedence; frequency or phase detection comparison in general H03D 3/00, H03D 13/00) [5]
H03L 7/087	· · · · using at least two phase detectors or a frequency and phase detector in the loop [5]